

CLAIMS

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1. An electronic device comprising a semiconductor die coupled to a plurality of bump terminals formed by stamping a plurality of leads.

2. The electronic device of Claim 1, wherein the top of the leads are coplanar with a die carrier.

10 3. The electronic device of Claim 1, wherein the device is encapsulated using a one sided process.

15 4. The electronic device of Claim 1, wherein the semiconductor die and the bump terminals are connected by a wire.

20 5. The electronic device of Claim 1, wherein the semiconductor die has a plurality of connection areas for directly contacting the bump terminals.

25 6. The electronic device of Claim 1, further comprising a mold lock region.

7. The electronic device of Claim 1, further comprising two rows of leads.

8. The electronic device of Claim 1, further comprising four rows of leads.

30 9. The electronic device of Claim 1, further comprising a plurality of v-shaped notches formed on the leads.

10. A lead frame comprising a plurality of leads wherein each lead has a bump terminal formed by mechanically stamping the leads.

5 11. The lead frame of Claim 10, further comprising a die carrier coplanar with the top of the leads.

12. The lead frame of Claim 10, further comprising stress tabs coupled to the end of the leads.

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13. The lead frame of Claim 10, wherein the lead frame is made from copper.

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14. The lead frame of Claim 10, wherein the plurality of leads are arranged into two rows.

15. The lead frame of Claim 10, wherein the plurality of leads are arranged into four rows.

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16. The lead frame of Claim 10, further comprising a plurality of v-shaped notches formed on each lead or stress relief.

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17. A method of manufacturing a semiconductor device comprising:

providing a lead frame having a plurality of leads;
forming a plurality of bump terminals on the leads
by stamping.

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18. The method of Claim 17, further comprising the step of coupling a semiconductor die to the bump terminals.

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19. The method of Claim 17, further comprising the step of encapsulating the semiconductor die using a one sided encapsulation process.

5 20. The method of Claim 18, wherein the step of coupling a semiconductor die further comprise the step of wire bonding wire between the semiconductor die and the bump terminals.

10 21. The method of Claim 18, wherein the step of coupling a semiconductor die further comprise the step of attaching a plurality of contact bumps on the semiconductor die to the bump terminals.

15 22. The method of Claim 17, further comprising providing a die carrier associated with the leads.

23. The method of Claim 17, further comprising the step of forming a plurality of v-shaped notches on the leads.

20 A method of manufacturing a semiconductor device comprising:

providing a lead frame having a plurality of leads;
forming a plurality of bump terminals on the leads
by stamping;

25 providing a die carrier;
attaching a semiconductor die to the die carrier;
coupling the semiconductor die to the bump terminal.

24. The method of Claim 21, further comprising the step
30 of encapsulating the semiconductor die using a one sided encapsulation process.

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25. The method of Claim 21, wherein the step of coupling a semiconductor die further comprise the step of wire bonding wire between the semiconductor die and the bump terminals.

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26. The method of Claim 21, wherein the step of coupling a semiconductor die further comprise the step of attaching a plurality of contact bumps on the semiconductor die to the bump terminals.

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27. The method of Claim 24, wherein the step of providing a lead frame further comprises forming a plurality of v-shaped notches in the leads.

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